

Central State Hospital 2016 Good Housekeeping Training

Good Housekeeping & Pollution Prevention

Standard Operating Procedures
&

Stormwater Pollution Prevention Plans (SWPPPs)

AGENDA

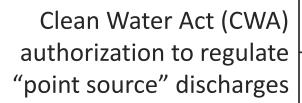
- Stormwater Regulations & Requirements
 - Regulations Overview
 - MS4 General Permit
 - Illicit Discharges
- Good Housekeeping/Pollution Prevention
 - Standards Operating Procedures
 - Stormwater Pollution Prevention Plan (SWPPP)

TODAY'S THEME: CLOSING THE COMPLIANCE LOOP





APPLICABLE STORMWATER REGULATIONS







MS4 General Permit

- Localities & State Entities within urbanized areas
 - Minimum Control Measures
 - Special Conditions for TMDLs



TOTAL MAXIMUM DAILY LOAD (TMDL)





Waterbody not meeting water quality standards



- TMDL is a plan (pollution diet) that establishes the maximum amount of a pollutant the waterbody can hold and meet water quality standards.
- **WLA** is the quantity of the pollutant (sediment, nitrogen, bacteria, etc.) that may be discharged.



Assign Waste
Load Allocations
(WLAs) for
pollutant(s) of
concern (POC) to
MS4s



EFFECTS OF POLLUTION ON ENVIRONMENT



Improperly disposed of animal waste and human waste from sanitary overflows cause high levels of bacteria (E.coli) in water bodies. Excessive E.coli makes water bodies unsafe for swimming and can sicken or kill people and wildlife.



Nitrogen and Phosphorous in **fertilizers** cause algae blooms in water bodies. Excessive algae produce toxins that sicken or kill people and wildlife.





EFFECTS OF POLLUTION ON ENVIRONMENT

Sediment from construction sites, bare and denuded areas without vegetative cover, and streambank erosion due to high volumes of rainwater runoff caused by urbanization.



- Carries other pollutants to water bodies which adversely affects wildlife.
- Clogs fish gills which interferes with breathing and kills fish.
- Creates a muddy bottom which adversely affects spawning beds.
- Reduces visibility due to suspended particles affecting the ability of fish to locate prey.
- Decreases the depth of the water which increases water temperatures which forces fish and animals to find a more suitable environment to live.
- Reduces light penetration which adversely affects plant growth.
- Interferes with navigation, flood control, recreation and fishing industries.



MUNICIPAL SEPARATE STORM SEWER SYSTEM

- Collects & conveys stormwater
 - Potential to convey pollutants downstream
 - Ultimately leads to a point discharge at a natural drainage way (outfall)

Activities/operations within areas ultimately draining to

regulated MS4 outfalls are subject to permit







MS4 GENERAL PERMIT

Requires the operator to:

"... develop, implement, and enforce a MS4 Program designed to reduce the discharge of pollutants from the regulated small MS4 to the maximum extent practicable ..."

Maximum Extent Practicable (MEP)

- Ensures compliance to water quality standards if the MS4
 Program:
 - Addresses Minimum Control Measures with Best Management Practices (BMP) implementation
 - Structural and nonstructural BMPs
 - Addresses Special Conditions for TMDLs



MS4 GENERAL PERMIT

Minimum Control Measures

- 1. Public Education & Outreach
- 2. Public Involvement/Participation

Overview of MCM # 3

- 3. Illicit Discharge Detection & Elimination
- 4. Construction Site Runoff Controls
- 5. Post-construction Runoff Controls

Focus on MCM #6



6. Pollution Prevention/Good Housekeeping

Special Conditions

- 1. Local Waterbody TMDLs
- 2. Chesapeake Bay TMDL



PAST DEQ/EPA AUDIT VIOLATIONS IN VIRGINIA

- DEQ audits approx. 20 MS4s per year (100 MS4s total)
- Common violations include failure to:
 - Implement/enforce illicit discharge program
 - Adequately address runoff from construction sites/implement ESC regs
 - Adequately manage stormwater discharges from maintenance facilities
 - Adequately document
 - Reduce pollutants to the Maximum Extent Practical

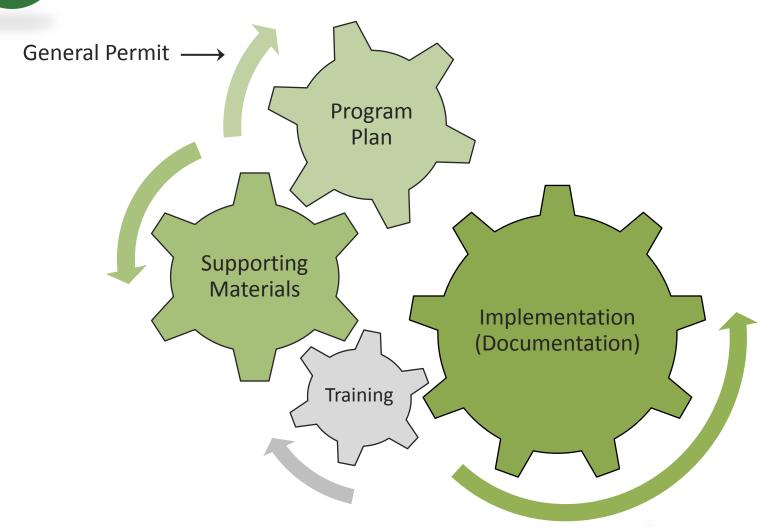
Penalties

- Not to exceed \$32,500/day/violation
 - Typically include a consent order





MS4 PROGRAM COMPONENTS



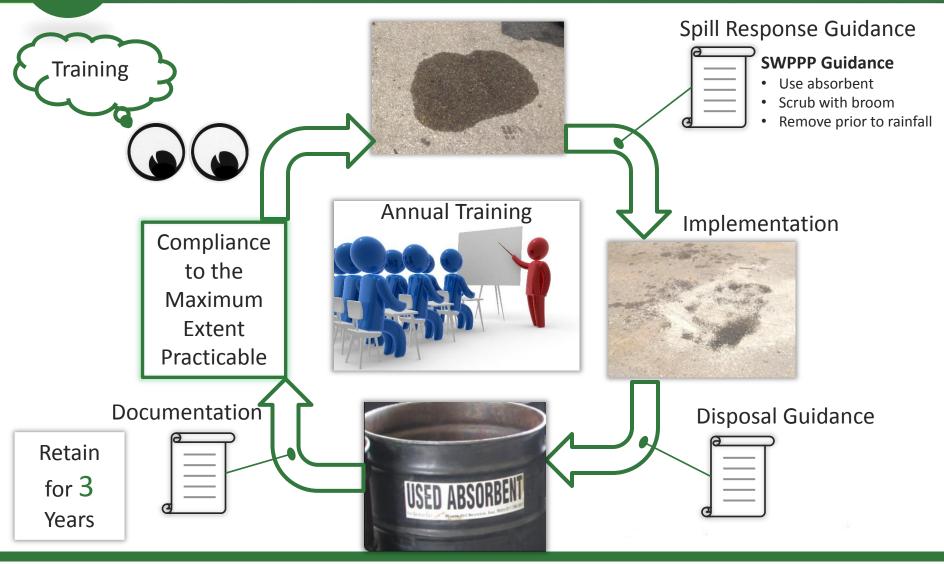


MS4 PERMIT REQUIRES TRAINING

- Effective Training = Implementation = Compliance
 - Familiarize staff with Resources
 - Standard Operating Procedures
 - Implementation Tools (SWPPPs)
 - Town Ordinances that prohibit illicit discharges
 - Closing the compliance loop in the field
 - Protect surface water quality
 - Elimination of non-stormwater discharge



CLOSING THE COMPLIANCE LOOP





ILLICIT DISCHARGE DETECTION AND ELIMINATION

- Documentation
- Identification of Illicit
 Discharge
- Outfall Screening
- Investigating Illicit Discharge
- Eliminating Illicit Discharge

Illicit Discharge Detection and Elimination Program Manual

Programmatic Overview of Central State Hospital's IDDE Program and Process Central State Hospita



June 2016

Petersburg, Virginia





WHAT IS AN ILLICIT DISCHARGE?

• Illicit Discharge - "Any discharge to an MS4 that is not composed entirely of stormwater, except discharges specifically identified in the Virginia Administrative Code not to be a significant contributor of pollutants to the MS4."







DEFINING AN ILLICIT DISCHARGE

An illicit discharge can:

- 1. Be a measurable flow from a storm drain that contains pollutants or pathogens;
- 2. Have a unique frequency, composition, and mode of entry in the storm drain system;
- 3. Be caused when the sewage disposal system interacts with the storm drain system; and
- 4. Can be discharges from pollutants from specific source areas



EXAMPLES OF ILLICIT DISCHARGES

- Automotive Fluids (oil, grease, antifreeze)
- Cooking oil and grease
- Solvents
- Paints
- Chemical cleaners
- Dumpster leachate
- Trash

- Improperly applied herbicides/pesticides
- Landscape waste (mulch, grass clippings)
- Sediment
- Vehicle wash water
- Improperly applied fertilizer



WHAT IS NOT AN ILLICIT DISCHARGE

Table 2. Examples of sources that are not considered illicit discharges.

- Fire-fighting activities
- Water line flushing
- Landscape/lawn irrigation
- Diverted stream flows
- Rising groundwater
- Uncontaminated groundwater infiltration
- Uncontaminated pumped groundwater

- Air conditioning condensate
- Footing or foundation drains
- Springs
- Water from crawl space pumps
- Dechlorinated swimming pool wastewater
- Discharges from potable water sources
- Flows from riparian habitats and wetlands





























DEFINING AN ILLICIT DISCHARGE







DEFINING AN ILLICIT DISCHARGE





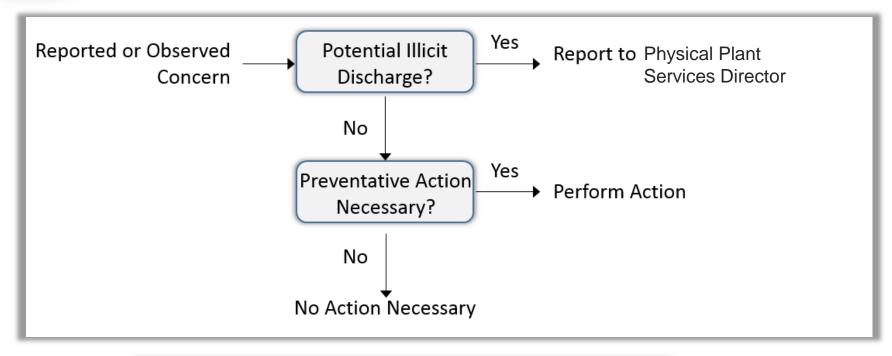


APPEARS TO BE, BUT NOT AN ILLICIT DISCHARGE





REPORTING AN ILLICIT DISCHARGE







QUICK QUESTION AND ANSWER

Question # 1: CSH enforces an illicit discharge ordinance that prohibits non-stormwater discharges.

- > True
 - False

Question # 2: Which of the following are sources of an illicit discharges?

- Soapy vehicle wash-water
 - Air conditioner condensate
- Soil erosion from a bare area lacking grass
 - Discharge from foundation drains



QUICK QUESTION AND ANSWER

Question # 3: Vehicles can be washed under the following conditions

- In a designated wash bay that drains to sanitary sewer
 - Near a storm drain
- Over grass with no soap or detergents
- At a commercial car wash

Question # 4: What would you do if hydraulic fuel is observed on the ground beneath stored/parked equipment?



GOOD HOUSEKEEPING/POLLUTION PREVENTION

- Permit requires implementation of SOPs to minimize or prevent pollutant discharge from daily operations that:
 - ✓ Prevent illicit discharge
 - ✓ Ensure proper disposal of waste (including landscape wastes).
 - ✓ Prevent discharge of vehicle wash water to storm sewer
 - ✓ Prevent discharge of wastewater to storm sewers
 - ✓ Require BMPs to filter water pumped from maintenance activities
 - ✓ Require BMPs to prevent pollutants in runoff from bulk storage (i.e. salt storage and topsoil stockpiles)
 - ✓ Prevent pollution discharge from leaking automobiles/equipment
 - ✓ Ensure proper application of pesticides and fertilizers



STANDARD OPERATING PROCEDURES

- Documentation & Reporting
- Non-structural BMPs
 - Manage vehicle washing and maintenance, dumpster operations/locations, power washing, fueling, chemical storage, and other applicable practices
- General Practice Guidance
 - Best Management Practices
 - Maintenance Schedule
 - Commonly Generated Pollutants
- Waste Management
 - Oil, gas, and diesel
 - Absorbents
 - Other applicable wastes

Good Housekeeping/ Pollution Prevention Program Manual

Programmatic Overview of Central State Hospital's Program and Process



June 2016

Petersburg, Virginia

For concerns related to Good Housekeeping/Pollution Prevention or for reporting pollution into stormwater runoff contact Jeff Hunter (Physical Plant Services Director) at 804-524-4723.





WRITTEN PROCEDURES FROM SOP'S

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6.5	Batteries
6.6	Treated Lumber
6.7	Empty Containers
6.8	E-Waste (Monitors and Computers)
6.9	Filters-Oil, Gas, Diesel, Paint
6.10	· · · · · · · · · · · · · · · · · · ·
6.11	Freon
6.12	Pesticides

5.1 VEHICLE WASHING

Improper vehicle washing can introduce a number of compounds into the MS4, including solvents, grease, sediment, and petroleum products as point source pollution (illicit discharge). Pollutants in waste water from washing vehicles on CSH property draining into the storm sewer or a water body, may pollute a nearby water body. In order to avoid this, wash vehicles away from the storm sewer system and areas such as mixing pads, staging areas, or other surfaces where vehicle washing is not permitted.

Best Management Practices

- ✓ Wash in designated wash bays that drain directly to the sanitary sewer.
- ✓ Use commercial car washes for typical fleet vehicles.
- If necessary, wash vehicles on pervious surfaces, such as grass or gravel (only with water no soap, detergents, waxes, etc.).
- Use nozzles that automatically turn off water when not in use.
- If detergents or cleaners must be used, collect wash water and dispose of in the sanitary sewer using berms or pumps. Alternatively, use biodegradable detergents/cleaners and ensure that wash water is directed onto a pervious surface (i.e. grass).
- Regular inspections should be conducted on wash bays to ensure that applicable components such as sand filters and drainage systems are functioning properly. Report any issues to the Physical Plant Services Director.
- ✓ Facilities with SWPPPs should utilize written checklist inspections at least once annually.

Maintenance Schedule

Maintenance should be conducted on applicable wash bay components (i.e. sand filters) per the manufacturer's directions or on an as-needed basis. The Physical Plant Services Director should retain records of any maintenance work and store them onsite, alongside this Good Housekeeping Manual.

Commonly Generated Potential Pollutants

- Vehicle soap
- Oil and hydraulic residue
- Sediment



Photo 2: Indoor Wash Bay.





SPILL PROCEDURES

In the Event of a Spill or Discharge

- 1. Contact the Environmental Program Manager
- 2. Assess the risk
- 3. Select personal protective equipment (PPE)
- 4. Stop the source
- 5. Confine the spill
- 6. Implement cleanup
- 7. Document incidence

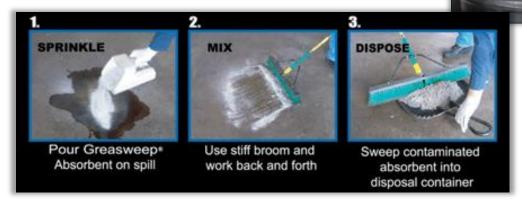






SPILL PREVENTION AND RESPONSE











GROUP EXERCISE

Please get together in Groups of about four (4) and answer the following questions:

- 1. Name some areas around the CSH facility where pollutants could be generated that effect water quality?
- 2. What are some of the pollutants?
- 3. What is done to ensure that these potential pollutants are managed properly and not exposed to precipitation?



GOOD HOUSEKEEPING TIPS

- Repair or replace defective equipment
- Keep equipment clean; don't allow excessive build-up of oil and grease
- Maintain clean floors and grounds on a daily basis
- Maintain a current file of Safety Data Sheets
- Label all containers
- Inspect and repair or replace corroded or damaged drums, tanks and dumpsters
- Keep documentation of all inspections with SWPPP



GOOD HOUSEKEEPING/POLLUTION PREVENTION

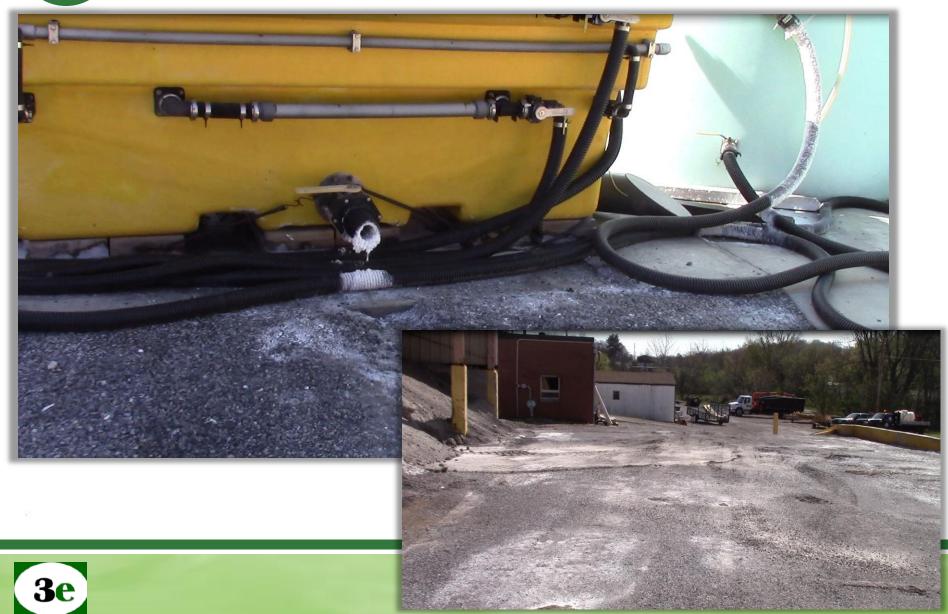


























































GOOD HOUSEKEEPING & POLLUTION PREVENTION PRACTICES











QUESTIONS AND ANSWERS

Thank You!



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